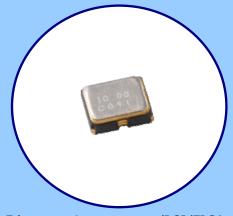




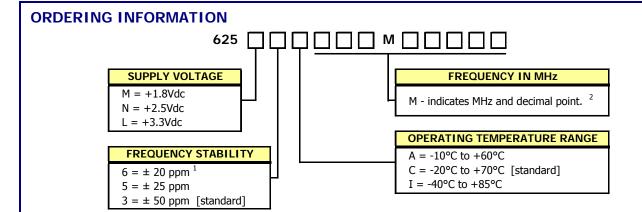
FEATURES

- Standard 2.5mm x 2.0mm 4-Pad Surface Mount Package
- HCMOS Output
- Fundamental and 3rd Overtone Crystal Designs
- Frequency Range 1 110 MHz
- Frequency Stability ±50 ppm Standard, ±25 ppm and ±20 ppm Available
- Operating Voltages +1.8Vdc, +2.5Vdc or +3.3Vdc
- Operating Temperature to -40°C to +85°C
- Output Enable Standard
- Tape & Reel Packaging Standard, EIA-418
- RoHS/Green Compliant [6/6]



APPLICATIONS

Model 625 is ideal for applications; such as broadband access, Ethernet/Gigabit Ethernet, microprocessors/DSP/FPGA, networking equipment computers and peripherals, digital video, cameras and other portable devices.

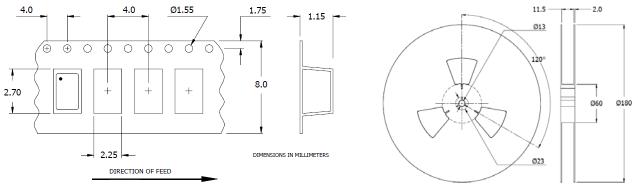


- 1] Consult factory for 6I Stability/Temperature availability.
- 2] Frequency is recorded with three leading significant digits before the 'M' and 5 significant digits after the 'M' (including zeros). [Ex. 3.579545 MHz, code as 003M57954; 14.31818 MHz, code as 014M31818; 125 MHz, code as 125M00000]

Not all performance combinations and frequencies may be available. Contact your local CTS Representative or CTS Customer Service for availability.

PACKAGING INFORMATION [reference]

Device quantity is 1k pcs. minimum and 3k pcs. maximum per 180mm reel. 8mm tape width.





MODEL 625 2.5mm x 2.0mm Low Cost HCMOS CLOCK OSCILLATOR

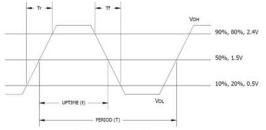
ELECTRICAL CHARACTERISTICS

	PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNIT		
	Maximum Supply Voltage	V_{CC}	-	-0.5	-	4.0	V		
	Storage Temperature	T _{STG}	-	-40	_	+100	°C		
	Frequency Range	f _O	-	1.0	_	110	MHz		
	Frequency Stability								
	[See Note 1 and Ordering Information]	Δf/f _O	-	-	ı	20, 25, 50	± ppm		
	Aging	$\Delta f/f_O$	@+25°C, 1st year	-	-	3	± ppm		
	Operating Temperature								
	Commercial	T _A	_	-10		+60	°C		
		• А		-20	+25	+70	Ü		
	Industrial			-40		+85			
	Supply Voltage			1.62	1.0	1.00			
	Model 625M Model 625N	V_{CC}	±10%	1.62 2.25	1.8 2.5	1.98 2.75	V		
	Model 625L			2.23	3.3	3.63			
	Supply Current		$C_L = 15pF$	2.57	5.5	5.05			
	Model 625M		1.0 MHz to 50 MHz	_	_	7			
	[+1.8V]		50.1 MHz to 110 MHz	_	_	, 15			
	Model 625N	I_{CC}	1.0 MHz to 50 MHz	-	-	10	mA		
RS	[+2.5V]		50.1 MHz to 110 MHz	-	-	15			
1 🗒	Model 625L		1.0 MHz to 50 MHz	-	-	15			
ΙΞ	[+3.3V]		50.1 MHz to 110 MHz	-	-	20			
ELECTRICAL PARAMETERS	Output Load	C_L		-	-	15	pF		
PA	Output Voltage Levels								
AL.	Logic '1' Level	V_{OH}	CMOS Load	$90\%V_{CC}$	-	-	V		
	Logic '0' Level	V_{OL}	CMOS Load	-	ı	$10\%V_{CC}$			
I K	Output Current								
lΞ	Logic '1' Level [M,N,L]	I_{OH}	$V_{OH} = 90\%V_{CC}$ (1.8V, 2.5, 3.3V)	-	-	-2, -4, -8	mA		
Ξ	Logic '0' Level [M,N,L]	I_{OL}	$V_{OL} = 10\%V_{CC}$ (1.8V, 2.5, 3.3V)	-	ı	+2, +4, +8	IIIA		
	Output Duty Cycle	SYM	@ 50% Level	45	-	55	%		
	Rise and Fall Time		@ 10% - 90% Levels, $C_L = 15pF$						
	Model 625M		1.0 MHz to 20 MHz	-	-	5			
	[+1.8V]		20.1 MHz to 110 MHz	-	-	4			
	Model 625N	T_R , T_F	1.0 MHz to 20 MHz	-	-	4	ns		
	[+2.5V]		20.1 MHz to 110 MHz	-	-	3			
	Model 625L [+3.3V]		1.0 MHz to 20 MHz 20.1 MHz to 110 MHz	-	-	3 2			
		T _S	Application of V _{CC}	-	2	5	mc		
	Start Up Time Enable Function	ış	Application of ACC	-	۷	3	ms		
			Pin 1 Logic '1', Output Enabled	0.7*V _{CC}	_	_			
			Pin 1 Logic '0', Output Disabled	- U.7 VCC		0.3*V _{CC}	V		
			Pin 1 Logic '0', Output Disabled Pin 1 Logic '1'	-	-		ma		
	Enable Time [M,N,L]			-	-	5	ms		
	Standby Current	I _{ST}	Pin 1 Logic '0', Output Disabled	-	-	15	μA		
	Period Jitter, pk-pk Period Jitter, RMS	рјук ук					nc		
	Phase Jitter, RMS	pjrms tjrms	Bandwidth 12 kHz - 20 MHz	-	-	25 1	ps		
	רוומשל אונופו, הויוש	giiis	Danawiani 12 KHZ - 20 MIA	_	-	1			

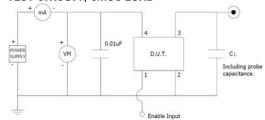
Notes

1. Inclusive of initial tolerance at time of shipment, changes in supply voltage, load, temperature and aging.

LVCMOS OUTPUT WAVEFORM



TEST CIRCUIT, CMOS LOAD



ENABLE TRUTH TABLE

PIN 1	PIN 3
Logic '1'	Output
Open	Output
Logic '0'	High Imp.



MODEL 625 2.5MM X 2.0MM LOW COST **HCMOS CLOCK OSCILLATOR**

MECHANICAL SPECIFICATIONS

PACKAGE DRAWING (2.50 ±0.20) (0.70) 0.098 ±0.008 0.028 (0.55) 3 4 XX.XX (2.00 ±0.20) (0.70) 0.022 0.079 ±0.008 0.028 C**D 2 1 • (0.90)0.035 (1.0) 0.039 Max. Key: (MM) Inch

MARKING INFORMATION

- 1. XX.XX Frequency in MHz.
- 2. C CTS and Pin 1 identifier.
- 3. ** Manufacturing Site Code.
- 4. D Manufacturing Date Code. [See Table 1 for codes.]
- 5. Complete CTS part number, frequency value and date code information must appear on reel and carton labels.

NOTES

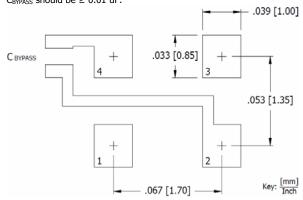
- 1. Termination pads [e4]. Barrier-plating is nickel [Ni] with gold [Au] flash plate.
- 2. Reflow conditions per JEDEC J-STD-020; 260°C maximum, 20 seconds.
- 3. MSL = 1.

TABLE I

		MONTH			JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	ост	NOV	DEC
	YEAR				JAN	FLB	IVIAK	AFK	IVIAT	JUN	JUL	AUG	JLF	001	NOV	DEC
2001	2005	2009	2013	2017	Α	В	С	D	Е	F	G	Н	J	K	L	М
2002	2006	2010	2014	2018	N	Р	Q	R	S	Т	U	V	W	Х	Υ	Z
2003	2007	2011	2015	2019	а	b	С	d	е	f	g	h	j	k	_	m
2004	2008	2012	2016	2020	n	р	q	r	S	t	u	٧	w	х	У	Z

SUGGESTED SOLDER PAD GEOMETRY

 C_{BYPASS} should be ≥ 0.01 uF.



D.U.T. PIN ASSIGNMENTS

PIN	SYMBOL	DESCRIPTION
1	EOH	Enable
2	GND	Circuit & Package Ground
3	Output	RF Output
4	V_{CC}	Supply Voltage